



Measuring the Group Shadow in Team Settings: The Design, Development and Evaluation of the Actualized Team Profile (ATP)

William L. Sparks, Ph.D. 

Chair & Professor, Leadership

McColl School of Business

Queens University of Charlotte

Email: sparksw@queens.edu

ORCID iD: <https://orcid.org/0000-0003-1588-0883>

USA

ABSTRACT

The aim of this paper is to demonstrate the validity and reliability of the Actualized Team Profile (ATP). The ATP is a 25-item self-report assessment that measures team culture based on the underlying emotionality of group members, using a four-component solution within a framework established by Wilfred Bion. Bion's (1961) research and framework provide a valid and reliable model for understanding the impact of unconscious or underlying emotionality on performance and members' satisfaction in group and team settings. Bion was the first to classify four modes of group culture based on the "basic assumption mental states" (BAMS) of group members, which represent their collective unconscious emotionality.

Validity of the ATP was established using Principal Components Factor Analysis (PCFA) to determine the number of factors (4) and the factor loadings of each survey item across the 4 scales. A four-factor model with eigenvalues greater than 1.0 was generated, and survey items were reduced from 40 to 20 based on the factor loading scores. The statistical PCFA analyses support a four-factor model of team culture and group behavior. The four-factor model in the PCFA analysis includes Detached ("fight/flight"), Dramatic ("pairing"), Dependent ("dependency"), and Dynamic ("work"). Eigenvalues ranged from 14.13 to 1.99 and accounted for 42% of the observed variance. The reliability for the ATP was estimated by assessing the internal consistency of the survey items for each of the four scales (i.e., Detached, Dramatic, Dependent, and Dynamic) by calculating Cronbach's alpha for each scale item. The standardized item Cronbach's alpha for the four scales ranged from .706 to .881. The research effort is summarized, and conclusions are drawn with specific implications for leadership development.

KEYWORDS: Group Culture, Team Dynamics, Psychodynamic, Wilfred Bion

Introduction

Bion (1961) proposed that when groups of three or more convene, a collective mental process emerges, enabling the group to surface underlying assumptions and build shared perceptions. This results in two concurrent modes of group behavior: the work group and the basic assumption group. The work group represents the overt, rational dimension, focused on explicit tasks and grounded in reality. When this mode prevails, members can manage their anxieties and participate effectively in creative problem-solving and learning. In contrast, the basic assumption group embodies the covert, irrational dimension, driven by unconscious fears and anxieties. This mode is rooted in fantasy and impedes the group's ability to solve problems and learn effectively.

Basic assumptions emerging in group cultures operate in an "as if" mode, such that the group acts "as if" an external force exists that threatens the group's well-being. There are four types of basic assumption mental states: dependency, fight, and flight. In the fight/flight mode, group members act as if there is an external force threatening their existence, and they must flee. This is the most primitive stage of group development. It emerges from the primal survival fight/flight mechanism, which is amplified in group settings. This basic assumption group is impulsive and non-reflective. It is characterized by apathy, withdrawal, and frustration. The flight level of team culture is classified as *Detached*.

The pairing group acts as if a new leader or product will provide salvation for the group's existence. Harmony and hopeful expectation mark this basic assumption group, where excessive

idealism and unrealistic aspirations abound. This level of team culture is referred to as *Dramatic*.

In the dependency mode, group members act as if the purpose of the meeting is to allow an all-knowing leader to protect and lead them. Group members follow the charismatic leader without question and take little responsibility for their actions or decisions. The dependency level of team culture is classified as *Dependent*.

The work group, classified as the *Dynamic* culture, is the most mature level of group development and the highest level of team culture. Open communication, creative problem solving, and synergistic learning mark this stage of group development. Members are accountable to each other, diverse views are appreciated, and team members have a resilient optimism for the future.

The Psychodynamic Perspective of Team Culture

There are numerous frameworks or lenses to view small group behavior and team dynamics. From my perspective, the psychodynamic "lens" is not only the most valid, but it also possesses the greatest utility in creating lasting, positive change in organizations. The psychodynamic perspective focuses on the impact that the unconscious has on human behavior. In the broadest sense, the psychodynamic approach for understanding group behavior can be classified into two categories: psychoanalytic and humanistic (McLeod & Kettner-Polley, 2004). The psychoanalytic approach falls under the *medical* metaphor, with an emphasis on diagnosis and description. In this camp, the works of Sigmund Freud (1950), Wilfred Bion (1961), and Carl Jung (1912) are paramount. The humanistic approach falls under the *developmental* metaphor, with

an emphasis on learning and prescription. In this camp, the works of Kurt Lewin (1945), Abraham Maslow (1954), and again Carl Jung (1912) are the most influential. The *ATP* represents an effort to synthesize both the psychoanalytic and humanistic approaches, taking the best from each, in order to create an engaging simulation that illustrates both diagnosis (psychoanalytic) and development (humanistic) processes in group settings.

Any discussion of psychodynamic theories must start with the founder of psychoanalysis, Sigmund Freud. Although Freud is most famous for his conception of the Id, the Ego, and the Superego, he actually studied group behavior early in his career. Freud viewed groups as primitive collectivities grounded in extreme and irrational emotions. Unable to hold two competing ideas at the same time, or to appreciate ambiguity or “the grey” that is very much a part of the human experience, especially in organizational life, groups, Freud stated, were capable of only two emotions: love (often without measure) and hate (often without reason). His distinction between the “Id” and the “Ego” would greatly influence Wilfred Bion’s work in group behavior, discussed in more detail shortly. One of Freud’s famous students and later a well-known clinician and writer in her own right, Melanie Klein (2002), expanded Freud’s work in groups to help explain how the mature and conscious Ego, when manifested at the group level, corresponds to reality-seeking behaviors and rational problem solving. Likewise, when the Id manifests at the group level, neurotic behaviors and psychological regression, including projection and repression, emerge as protective mechanisms for the group.

Swiss psychologist Carl Jung also explored group-level behavior. And like Freud, he was convinced that groups existed, psychologically at least, to avoid reality and sustain their existence on illusions. In fact, Jung famously said that when “100 clever heads join together in a group, one big nincompoop is the result.” That’s about as blunt as you can get. At a much broader level, Jung was enamored by the notion of the *Collective Shadow*, which would include not only a team and organization, but in fact entire regions,

nations, and ultimately, all of humanity. Irrespective of the focus being on the individual or the group, they were united in the finding that confrontation – awareness, acknowledgement and integration – was crucial if individuals and teams were going to realize their highest potential.

This brings us to Wilfred Bion, arguably the most influential thinker, researcher and writer in small group behavior and the concept of team culture. Not only did Bion agree with Freud and Jung that the unconscious was a crucial part of group life, but he was also able to classify and categorize the collective shadow found in groups. Wilfred Bion’s seminal work in group behavior is predicated on the unconscious and underlying emotionality of the groups.

According to Bion, groups simultaneously operate in two distinct states. One state is conscious, grounded in reality, and focused on the group’s official task. Bion referred to this element of group behavior as the “work group.” The second level, which is unconscious and grounded in negative fantasy, is covert. Bion referred to this group dynamic as the “basic assumption group.” These two different levels always coexist together to some degree in every group. When the basic assumption group becomes dominant, the group loses touch with reality and begins to operate on tacit (“as if”) assumptions grounded in emotion.

Groups simultaneously operate in two distinct levels or states. One state is conscious, grounded in reality, and focused on the group’s official task. Bion referred to this element of group behavior as the “work group.” The second level, which is unconscious and grounded in negative fantasy, is covert. Bion referred to this group dynamic as the “basic assumption group.” These two different levels always coexist together to some degree in every group. When the basic assumption group becomes dominant, the group loses touch with reality and begins to operate on tacit (“as if”) assumptions grounded in emotion. Figure 1 illustrates the influence of Bion’s terms in relation to the ATP scales and their corresponding underlying emotionality.

Figure 1

Basic Assumption Group	Underlying Emotion or State	ATP Scale
“Fight/Flight”	Apathy & Anger	<i>Detached</i>
“Pairing”	Hope & Frustration	<i>Dramatic</i>
“Dependency”	Fear & Anxiety	<i>Dependent</i>
“Work”	Passion & Authenticity	<i>Dynamic</i>

Using a Bionic framework for describing small group behavior and team culture has been discussed, but it may be helpful to illustrate the concept of culture. Team culture is defined as *the perceived attitude and group dynamic that results from the dynamic interplay between the overt task and the collective group shadow*. Culture emerges as the result of this dynamic tension and exists at two levels: 1. Conscious actions (visible) and 2. Shadow assumptions (invisible). Moreover, teams consider questions concerning “*What* do we need to accomplish?” and “*When* is the deliverable due?” primarily in the conscious element of group life. Questions related

to “*How* are we working as a team?” and “*Why* are we working together?” occur more in the Shadow or unconscious realm of group behavior. Finally, the *5 Dimensions of Teamwork* are illustrated as they relate to this two-level distinction. The dimensions of *Communication*, *Conflict Management*, and *Engagement* occur primarily in the conscious or visible realm, while the dimensions of *Purpose* and *Trust* exist primarily below the conscious level, in the Shadow or invisible realm. Figure 2 illustrates the ATP conceptualization of team culture:

Figure: 2



In this conceptualization, culture consists of three distinct aspects: 1. Observable behaviors and artifacts that are visible above the surface; 2. Norms and values that guide behavior and exist both above and below the surface; and 3. The collective shadow of the group, which is unconscious and operates at a tacit (“as-if”) level.

1. **Observable Behaviors and Artifacts:** The patterns of communication, decision-making, and conflict management processes that are unique to a team, as well as what behaviors are rewarded or reinforced, and what behaviors are punished or ignored. Artifacts include the team’s logo, mission statement, dress code, and formal hierarchy that resides within the team.
2. **Dimensional Norms and Values:** The “unwritten rules” of engagement that reinforce expectations, including the more deeply held convictions about what is “good,” “bad,” “desirable,” “undesirable,” and the like. *The 5 Dimensions of Teamwork* exist both above (*Communication, Conflict Management and Engagement*) and below (*Purpose and Trust*) the surface. Essentially, these elements of culture are made explicit when rationales and justifications for certain acts are used, and decisions are made.
3. **Collective Shadow:** The deepest level of culture that is unconscious and can be surfaced only through deep discovery, vulnerability and awareness. The tacit or “as-if” assumptions about the team and its larger environment reside here, and lead to group behavior that is often in reaction to someone or something. Primal issues such as scarcity, abundance, fear, safety, and survival are grounded in this deepest level of culture.

Team Culture vs. Organizational Culture

It is important to distinguish between the team culture and organizational culture. While the two are related and may even be very similar, they are different, separate, and unique. A metaphor to describe the differences between the two is the comparison between the national weather map (organizational culture) and your local weather forecast (team culture). The term “culture” was first used by the late Elliott Jaques (who also coined the term “midlife crisis”) in 1951 to describe the shared assumptions and observable patterns of behavior in a manufacturing environment. Perhaps the name most associated with organizational culture is Edgar Schein (2016), whose seminal work in this area led to an appreciation for culture

existing at multiple levels. Schein also explicitly noted the unconscious element of culture, which he referred to as “underlying assumptions” and “basic assumptions,” as the most difficult yet most important element of culture to manage. Influenced by Schein, numerous other organizational researchers, including Manfred Kets de Vries and Danny Miller (1984), Robert Quinn (1996), and Jerry Harvey (1988), highlighted the importance of identifying the underlying or shadow elements of an organization if you are going to successfully transform the corporate culture.

So far, we have defined team culture and compared it to organizational culture. It is important to understand what organizational dynamics and elements create and sustain culture. Research (Sparks, 2019; Sparks, 2002) in this area has uncovered the three major areas that determine team culture, which are: Context, the individual members, and the leader of the team.

1. **Context**—the context refers to a number of elements. First, the larger organizational culture in which the team operates impacts the team culture, just as the national weather season impacts local weather forecasts. Second, the general dynamic of expanding or contracting is a crucial contextual element that determines culture. That basic element—are we growing (expanding) or are we shrinking (contracting)—has a direct impact on team culture. Finally, the history of the team, including traditions, accomplishments, and failures, helps to create culture.
2. **Individual Members**—the styles of the individual team members (i.e., *Achiever, Affirmer* and *Asserter*) and the unique composition of those styles have an important role to play in creating team culture. Often thought of as something “out there,” this book is designed to help each of us reconsider what impact our own style has on creating and sustaining team culture, for good or for ill.
3. **The Leader**—finally, and perhaps most importantly, the style and shadow of the leader has a critical impact on the culture of a team or group. In fact, my research supports the notion that of all the other elements in play, the leader’s style is the most important element in creating and sustaining team culture.

Validation of the Actualized Team Profile

The ATP provides a measure of team culture that results from the underlying emotionality of a group based on Bion’s



theoretical framework. The survey contains five survey items for each of the four scales for a total of 20 items. There are five (5) survey items that assess the *5 Dimensions of Teamwork*, and the ATP survey concludes with an open-ended question asking for additional comments on the team's performance. The survey items by scale follow:

The Detached Scale

There is little interest in getting the job done.
Members are hostile towards each other.
Some members do not attend meetings.
We tend to drift off task.
Some members do not participate.

The Dramatic Scale

Some members want to be accepted by the group at any cost.
We are more concerned about maintaining harmony than about getting work done.
We ignore obvious problems.
We are unrealistically optimistic about our future.
We are sometimes guilty of setting unrealistic goals.

The Dependent Scale

We are unable to manage our time effectively.
We often ask for guidance.
We wait to be told what to do.
Our leader tends to know what's best for us.
We often appeal to our leader for direction.
Members appreciate different opinions.

The Dynamic Scale

We are effective listeners.
We communicate directly and honestly with each other.
We usually provide thoughtful feedback to each other.
New ideas are expressed freely.

The ATP also measures five (5) dimensions or characteristics of high-performing teams. These items are not Likert-type scale, but rather allow the participant to allocate up to 10 points for each dimension based on the perceived quality of the group. In the ATP, a 10=exceptional or very strong on a given dimension, whereas a one (1 =poor or very low in this area. The five dimensions follow:

1. **Communication**
2. **Conflict Management**
3. **Engagement**
4. **Purpose**
5. **Trust**

The ATP has been administered to thousands of individuals in group and team settings in a variety of organizations, including business corporations, academia, non-profit and religious organizations, and governmental agencies. Appropriate sample size varies. The minimum number to meet the definition of a group is three. The most important criterion in determining the group size is whether or not the group sees itself as a group. If not, subgroups most likely exist in the larger group context, and the ATP should be given separately to each subgroup within the larger department, division, or team.

The Scale Development Process

Designing and constructing an attitude assessment scale consists of three general stages: design, development, and evaluation ([Schwab, 1980](#)). The theoretical framework and literature review were presented to provide the general developmental foundation of the ALP. Within the three broad stages of constructing an attitude assessment scale, Hinkin ([1998](#)) identified six steps in the scale development process. These six steps are presented in Table 1:

Table 1 SCALE DEVELOPMENT PROCESS	
Step 1:	Item Generation
Step 2:	Questionnaire Administration
Step 3:	Initial Item Reduction
Step 4:	Confirmatory Factor Analysis
Step 5:	Convergent/Discriminant Validity
Step 6:	Replication

Item generation is the essential first step in developing a new Likert-type scale. The primary concern during this initial stage is content validity, which should be built into the scale through the development of clear, unambiguous, and accurate items that "...adequately capture the specific domain of interest" ([Hinkin, 1998](#)).

It is during the initial design step that a researcher should understand the theoretical foundation that provides the basis for the scale's development. This study fell under the deductive approach to scale development because the theoretical foundation being used to define ATP provided enough information to generate an initial set of items. The major advantage of the deductive approach to scale development is that, if done properly, this approach helps to ensure content validity ([Hinkin, 1995](#)).

Survey administration is the second step of the Likert-type scale development process. During this stage of scale development, the items that were retained during the content validation assessment were used to a pilot sample to confirm expectations of the psychometric properties of the new measure. Critical issues

regarding scale development during this step included choosing a representative pilot sample, the sample size, and the total number of items in the new measure. These and other scaling issues are discussed in the reliability and validity sections of this paper.

Following the initial survey administration, the third step in the process of developing a Likert-type scale is the initial item reduction. Once preliminary data have been collected from the pilot sample, factor analysis was employed to further refine the scale. PCFA with orthogonal rotation is the most widely used factoring method for item reduction ([Hinkin, 1995](#)). Although no absolute cutoff exists for determining which items should remain on a given scale, that is, which items most clearly represent the content domain of the underlying construct, a .40 criterion level is most commonly used to judge factor loadings as meaningful ([Hinkin, 1998](#)). PCFA was also used to determine the latent dimensions of the ALP framework, and a minimal eigenvalue of 1.0 was used as an appropriate criterion for retaining each dimension of the ATP assessment scale.

Once validity was established through PCFA, internal consistency should be established. Cronbach's alpha is the more widely accepted and utilized technique for establishing internal reliability, and is the recommended statistic when employing PCFA (Cortina, 1993).

The final two stages, assessing convergent and discriminant validity and replication, although critical to a scale's ultimate utility, are beyond the scope of this study. Convergent and discriminant validity are measures of criterion-related validity, the ability to predict a change in certain variables based on data from the predictor variable. Although this may be of eventual interest for the scale's utility, only face validity, content validity, and construct validity were ascertained for this investigation. Likewise, the final step, replication, is a time-consuming process that often takes years to establish (Hinkin, 1998). Preliminary data on replication reliability and validity will be gathered during the subsequent administrations of the ATP, as well as efforts to predict performance, job satisfaction, and intrinsic satisfaction (e.g., the correlation of Actualized Leader behaviors with individual and group performance, etc.). For the current investigation, validity was assessed using PCFA to determine both the underlying structure and the number of factors explaining the observed variance (eigenvalues ≥ 1.00), and PCFA was employed to determine survey item retention ($\geq .40$) for the five items per scale with the highest R^2 .

Limitations of the Research Methodology

Likert-type scales offer a range of responses with different intensities from 'strongly agree' to 'strongly disagree.' Each participant has a different interpretation of the response categories, which can lead to a degree of imprecision in the response set, data collection, and data analysis. Previous researchers have commented that Likert-type scales are akin to a "ruler that stretches or contracts," which can and does impact the precision of the data collected.

The study design has limited generalizability due to homogeneous samples used for data collection. Although the sample size is beyond the recommended size of 200 ($n=248$), the sample was non-random and somewhat homogeneous (all members of the same organization). Additionally, the problems of social desirability and bias are limitations when using self-report measures. Social desirability, the tendency to answer questions in a manner the respondent believes that they should be answered, as opposed to the way the respondent actually believes, creates bias and error in the data analysis.

There are limitations related to validity as well. First and foremost, this research design does not afford a measure of criterion-related validity. Ultimately, one would want to be able to predict a group's performance based on the survey score. For example, are certain leadership styles, such as an Actualized Asserter, more effective than others with different challenges and tasks? Future research will need to establish criterion-related validity. Moreover, PCFA provides limited construct validity information due to the subjective nature of its statistical measures.

Study Sample Demographics

Before reviewing the validity and reliability analyses findings, the descriptive statistics for the current investigation are presented. First, the data were collected from a variety of organizations representing financial services, manufacturing, healthcare, and professional sports, as well as MBA students at an AACSB-accredited comprehensive university in Charlotte, NC, USA.

Data for the survey administration sample were captured over a six (6) month period from June to December, 2001. During this time, 248 participants working in applied team settings completed the ATP as part of team development sessions. Table 2 summarizes the sample's demographics.

Table 2 DEMOGRAPHIC CHARACTERISTICS Study Sample	
CHARACTERISTIC	PERCENTAGE (%)
Gender	
Male	31
Female	65
Missing Data	4
	100
Age	
20-30	44
31-40	32
41-50	10
51-60	5
61 and over	2
Missing Data	7
	100
Professional Experience	
1-5 Years	43
6-10 Years	24
11-15 Years	21
Over 15 Years	8
Missing Data	4
	100

ASSESSING VALIDITY

Validity was assessed for the ATP using Principal Components Factor Analysis (PCFA), a statistical technique used for exploratory data analysis. The underlying assumption of exploratory data analysis is that the more one knows about the data, the more effectively and efficiently one can develop, test, and refine a given theory, or in this case, a measurement instrument (Hartwig & Dearing, 1979). Exploratory data analysis describes and summarizes data by grouping together correlated variables in factors, labeled “components,” that are independent of each other (Hartwig & Dearing, 1979). These components are often rotated to maximize the variance explained by each factor (Litwin, 1995).

Principal Components Factor Analysis

Principal Components Factor Analysis (PCFA) is a statistical technique that linearly transforms an original set of variables into a substantially smaller set of uncorrelated variables. This process identifies the relevant factors under study (Dunteman, 1989). PCFA is an appropriate statistical technique when the underlying factor structure is unknown. The goal of PCFA is data reduction, allowing the researcher to better understand and interpret data collected from a smaller set of uncorrelated variables (Dunteman, 1989).

There are several guidelines and requirements for using PCFA. There are numerous strategies for determining how many latent factors exist in a data set, and for ascertaining which survey items should be retained.

Assessing the Latent Structure of the Data Set

Determining the number of factors, or components, to retain depends on both the underlying theory and the quantitative results of the research endeavor (Hinkin, 1998). Several guidelines

have been established to assist researchers in making decisions about the number of latent factors to retain.

Perhaps the most well-known rule of thumb in survey development is Kaiser’s criterion. Kaiser’s criterion (also known as Kaiser’s Rule) states that only components with eigenvalues that are greater than 1.0 should qualify for retention. An eigenvalue is the total amount of variance explained by a factor, and it represents the sum of the squared loadings of each variable for that factor (Hinkin, 1998).

Another guide for determining the number of factors to retain in a PCFA is the scree plot test. The “scree” is defined as the rubble or valley where the graph plotting the factors begins to level off, and it is a graphically illustrated plot in the data set. As successive factors are extracted, and their contribution to explaining the observed variance decreases, the graph declines. The point of interest is where the curve connecting the points starts to flatten out. It is at this point where a valley or scree appears in the graph, and where factor retention may stop (Kinnear & Gray, 1999).

In addition to using the Kaiser Criterion and scree plot test to decide on the number of factors to retain, the underlying theory or model guiding the research should also direct factor retention decisions so long as the data set is consistent with the model in use (Hinkin, 1998). That is, the research findings should fit the underlying theoretical framework in a conceptually sound way. The findings for the present study do fit the ATP framework and the conceptual models of small group behavior and team culture as defined by Wilfred Bion, and a combination of the Kaiser Criterion and the ATP theoretical framework was used to determine the number of latent factors to retain, and the four-factor solution presented in Table 3.

Table: 3
PCFA Four-Factor Solution

Component 1	Detached
Component 2	Dynamic
Component 3	Dramatic
Component 4	Dependent

Latent Structure Assessment and Item Retention Analysis

PCFA of the measurement items was conducted using the data collected from the 248 surveys collected. An orthogonal (varimax) rotation was used to compute a loading matrix that represented the relationship between the observed variables and each factor. Initial PCFA statistics indicated the presence of four factors (i.e., components or dimensions of motive need leadership)

with eigenvalues greater than 1.0 that accounted for 42.33% of the total variance observed. The remaining 57.67% of variance from the data set was not accounted for and was assumed to lie with factors not measured by the assessment instrument. Table 4 presents the four-component solution and resulting Eigenvalues and cumulative observed variance explained by the four-factor model.

Table: 4

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.130	28.260	28.260	6.730	13.463	13.463
2	3.758	7.517	35.776	5.473	10.946	24.409
3	2.979	5.957	41.734	4.754	9.507	33.913
4	1.990	3.981	45.714	4.206	8.412	42.325

Extraction Method: Principal Component Analysis.

Assessing Validity: Content and Construct Validity

Both content and construct validity have been established for the ATP using Pearson Correlational Coefficients (2-tailed tests)

and a Principal Components Factor Analysis (PCFA) for construct validity. Table 5 illustrates the range of the Pearson coefficients for the factor loadings generated using PCFA.

Table: 5

Factor Loading Scale Component Ranges

Detached	.509-.708
Dramatic	.563-.838
Dependent	.507-.674
Dynamic	.542-.720

Estimating Reliability

Coefficient alpha, commonly referred to as “Cronbach’s alpha” and designated with “ α ,” is a measure of internal consistency that estimates how well items “hang together.” Reliability is a necessary condition for validity (Hinkin, 1998). In survey development, coefficient alpha measures the homogeneity of items for a given scale. Although there are other forms of reliability that can be estimated in survey research (Spector, 1992), coefficient alpha is a necessary estimate for scale development and the recommended reliability statistic when computing PCFA. The overall reliability estimates for each of the five scales of group culture are presented in Table 9, and the specific statistical output

for each scale follows. Reliability estimates were calculated for each scale of the Group Culture Assessment Scale in an iterative fashion. First, coefficient alphas were calculated for all 10 items of each scale. Then, internal consistency was estimated for the total number of items per scale to be retained in the survey’s final version based on the PCFA assessment. The number of items retained for each scale in the survey’s final version is five (5) per scale, using a minimum reliability estimate threshold of .40. The total number of items retained for this section of the final version of the survey was 20. Table 6 summarizes this reliability assessment effort utilizing Cronbach’s alpha.

Table 6 RELIABILITY ASSESSMENT Cronbach’s Alpha			
Scale	Cronbach’s Alpha	Cronbach’s Alpha Based on Standardized Items	N of Items
Detached	0.8673	0.8808	5
Dramatic	0.6360	0.8235	5
Dependent	0.5146	0.7062	5
Dynamic	0.8457	0.8343	5

Reliability Assessment for the Detached Scale

The *Detached* scale possessed a total reliability of $\alpha = .881$. Coefficient alpha was computed for the five (5) items retained for this scale. The factor loadings ranged from .509 to .708 (exceeding the .40 recommendation). Cronbach’s alpha decreased if any of the items were deleted and the .40 minimum threshold established by Hinkin was used to make item retention decisions.

Reliability Assessment for the Dramatic Scale

The *Dramatic* scale possessed a total reliability of $\alpha = .824$. Coefficient alpha was computed for the five (5) items retained for this scale. The factor loadings ranged from .563-.838 (exceeding the .40 recommendation). Cronbach’s alpha decreased if any of the items were deleted and the .40 minimum threshold established by Hinkin was used to make item retention decisions.

Reliability Assessment for the Dependent Scale

The *Dependent* scale possessed a total reliability of $\alpha = .706$. Coefficient alpha was computed for the five (5) items retained for this scale. The factor loadings ranged from .507 to .674 (exceeding the .40 recommendation). Cronbach’s alpha decreased if any of the items were deleted and the .40 minimum threshold established by Hinkin was used to make item retention decisions.

Reliability Assessment for the Dynamic Scale

The *Dynamic* scale possessed a total reliability of $\alpha = .834$. Coefficient alpha was computed for the five (5) items retained for this scale. The factor loadings ranged from .542-.720 (exceeding the .40 recommendation). Cronbach’s alpha decreased if any of the items were deleted and the .40 minimum threshold established by Hinkin was used to make item retention decisions.

Summary

The *Actualized Team Profile* (ATP) is a valid and reliable self-reporting team-based assessment for measuring small group behavior and team culture based on the psychodynamic framework of Wilfred Bion. The steps outlined in this effort follow well-accepted guidelines for the scale development process (Hinkin, 1995) and yield a four-factor model of leader style and team culture, with impressive factor loading well above the suggested .40 cutoff, which indicates that the retained survey items have a high degree of construct validity. Moreover, the scales are estimated to have a high degree of reliability. The scales’ average Cronbach’s alpha is .811, meaning that the consistency of the items by scale is very good. As such, it can be affirmed that the ATP is both a precise (valid) and consistent (reliable) assessment for measuring team culture based on the underlying emotionality of the group.



References

- Bion, W.R.(1961). *Experiences in Groups*. New York: Basic Books.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research* 1(2), 245-276.
- Cortina, J. M. (1993). What is coefficient alpha?: An examination of theory and applications. *Journal of Applied Psychology*, 78, 98-104.
- Dunteman, G. H. (1989). *Principal components analysis*. Newbury Park, CA: Sage Publications, Inc.
- Freud, S. (1950). *Group Psychology and the Analysis of the Ego*. New York: Hogarth Press.
- Hartwig, F. & Dearing, B. E. (1979). *Exploratory data analysis*. Newbury Park, CA: Sage Publications, Inc.
- Harvey, J.B. (1988). *The Abilene Paradox: And Other Meditations on Management*. San Francisco: Jossey-Bass Publishers.
- Hinkin, T. R. (1995). A review of scale development practices in the study of organizations. *Journal of Management*, 21(5), 967-986.
- Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods*, 1(1), 104-121.
- Jaques, E. (2006). *Requisite Organization, 2nd Ed.* Falls Church, VA: Cason Hall & Co. Publishers.
- Jung, C. (1912). *The Psychology of the Unconscious*. New York: Dover Publications.
- Jung, C. (1969). *The structure and dynamics of the psyche (2nd ed.)*. Princeton, NJ: Princeton University Press.
- Kets de Vries, M. & Miller, D. (1984). *The Neurotic Organization*. San Francisco: Jossey-Bass Publishers.
- Kim, A. (2023). "Follow the leader: How CEO's personality is reflected in their company's culture." *Stanford Business*, August 1, 2023.
- Kinnear, P. R. & Gray, C. D. (1999). *SPSS for Windows made simple (3rd ed.)*. East Sussex, UK: Psychology Press Ltd., Publishers.
- Klein, M. (2017). *Lectures on Technique*. London: Routledge.
- Lewin, K. (1945). *Resolving Social Conflicts*. New York: Harper & Brothers Publishers.
- Litwin, M. S. (1995). *How to measure survey reliability and validity. The survey kit (Vol. 7)*. Thousand Oaks, CA: Sage Publications.
- Maslow, A. (1954). *Motivation and personality (1st ed.)*. New York, NY: Harper & Brothers.
- McCleod, P.L. and Kettner-Polley, R. (2004). "Contributions of Psychodynamic Theories to Understanding Small Groups," *Small Group Research*, Vol. 35(3), 333-360.
- Nunnally, J.C. (1967). *Psychometric theory*. New York, NY: McGraw-Hill.
- Quinn, R.E. (1996). *Deep Change*. San Francisco: Jossey-Bass Publishers.
- Schein, E. (2016). *Organizational Culture and Leadership, 5th Ed.* Hoboken, NJ: John Wiley & Sons, Inc.
- Schwab, D. P. (1980). Construct validity in organization behavior. In Cummings, L. L. & Straw, B. M. (Eds.), *Research in organizational behavior*. Greenwich, CT: JAI.
- Sparks, W.L. (2019). *Actualized Leadership: Meeting Your Shadow & Maximizing Your Potential*. Alexandria, VA: Society for Human Resource Management Publishing.
- Sparks, W.L. (2002). *Measuring the Impact of Basic Assumption Mental States on Group Culture: The Design, Development and Evaluation of a Group Culture Assessment Scale*. Washington, DC: Unpublished Doctoral Dissertation, The George Washington University.
- Spector, P. E. (1992). *Summated rating scale construction: an introduction*. Newbury Park, CA: Sage Publications, Inc.
- Stock, D. and Thelen, H.A. (1958). *Emotional Dynamics and Group Culture*. Washington, DC: National Training Laboratories.
- Thelen, H.A. (1954). *Dynamics of Groups at Work*. Chicago: University of Chicago Press.